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# PRESIDENT'S ADDRESS,

DELIVERED AT

THE ANNUAL MEETING

OF THE

## BRITISH MEDICAL ASSOCIATION,

*Held in Birmingham in August 1872.*

BY

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## PRESIDENT'S ADDRESS.

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**GENTLEMEN**,—When, at the first meeting of this Association, Sir Charles Hastings congratulated himself that the hearers of his inaugural address included “some of the brightest ornaments of our profession,” and predicted for the infant Society a vigorous adolescence ; he could scarcely have anticipated for it a growth so rapid, a grasp so comprehensive, as in this short period to have embraced the representative medical men of this kingdom ; or that its objects would prove so cosmopolitan as to have enlisted the interest and approval of continental nations and of our transatlantic brethren.

Sustained by the moral and material support of a large professional constituency, the action of the Society has been deliberate, untrammelled, and healthy ; whilst its debates have been free, and have represented all shades of opinion.

The volumes of “Transactions” and its weekly JOURNAL have materially contributed to the spread of intelligence, to the advancement of science, to the recognition by the State of medical knowledge as affecting public health, and to the growth and guidance of general and professional opinion.

Indeed, the Association may be said to have influenced every movement—political and social—by which the heart of our profession has been stirred since its establishment.

The concluding wish of Sir Charles Hastings has been emphatically realised. Referring to the “objects” held in view by the original promoters, he said, “The contemplation of them appears to me, indeed, to open to us a vast and unbounded prospect, to beget high and lofty thoughts of our future proceedings. I may be too sanguine in my expectations, but I cannot help indulging in the gratifying, the cheering, the delightful thought that, if we engage in the undertaking—as we

are bound to do by the obligations which our profession imposes upon us, with the zeal and alacrity of men anxious for the good of mankind—the Association must be of some use, must have a direct tendency to extend the empire of knowledge, and to increase our power over disease."

Permit me to congratulate you on that most important decision which was proposed and carried at a special general meeting held in this place in 1856, which changed the title from Provincial to British. The nationality of the aims which it was sought to accomplish have been thereby declared and accepted; and its name has consequently become imperial.

This is not only right in itself, but is an act of the simplest justice to our esteemed metropolitan members, who have freely joined our ranks, have aided their provincial colleagues by counsel and labour, and have exhibited deep interest in the management and success of our enterprise. Their fraternal conduct proves the soundness of the effort made to gather the army of medical practitioners in this country under one banner, to unite their strength, and to direct it into those channels in which it may be best exerted for the public good. It is also a graceful admission that, whilst London cannot fail, from its magnitude, its gigantic opportunities, and its liberal rewards, to attract and foster the ripest intellects, the most commanding genius that this country produces, it arrogates to itself no claim to a monopoly of talent, no despotic control of general medical policy.

Such deep interest did our local Physicians and Surgeons evince in the establishment of this Association, that the town may almost vie with Worcester in a claim to the honours of paternity. As attendants at the first meeting, I find names still regarded with high esteem: the Drs. Johnstone (Edward, John, and James), Booth, Darwall, Birt Davies, and J. Corrie, with Messrs. Hodgson, Alfred Jukes, William Sands Cox, Samuel Partridge, Joseph Wickenden, John Ingleby, J. Ledsam, R. Middlemore, and — Parsons.

It would scarcely become me, a Birmingham Surgeon, to estimate the moral influence and importance to any infant Society represented by these names. Suffice it to say, they con-

stituted the local leaders of a learned profession ; and many of them had a reputation so wide as to be national. Few of these primary members are left to us after the eight lustres that have passed ; but their example, their labours have given brilliance to its earlier history, and their care has erected beacons by which the quicksands of danger have been hitherto avoided, and our future course may be guided in safety.

The recent list of members shews by its magnitude how uncontrollable would be the government of so large and widely spread a fraternity by any central authority, unless the federal principle were to some extent adopted in its management. It proves, too, the wisdom of those changes of law by which adequate representation is secured to every section of the Society, so that the views of each may be expounded by its representatives, and considered in the Council of the Association.

The Branches now established have added numerical strength ; and being self-supported, self-governed, and in direct and perfect union with the parent trunk, have increased alike its popularity, its usefulness, and its stability.

Birmingham, according to our quaint historian, William Hutton, was reputed to have held out the hand of good-fellowship to all comers. He asserts that "she not only draws our persons but our esteem from the place of our nativity, and fixes it upon herself." Some of our visitors may demur to this statement : and without venturing upon a general endorsement of it, I may, perhaps, attribute the honour of receiving the British Medical Association on this, the third occasion of its annual meeting being held here, to the early perception by a former generation of its claims upon medical support ; and to a remembrance, almost traditional, of previous hospitality and consideration. Other attractions, however, may have justly aided your decision. The central position of the town, its varied industries, the educational activity and energy of its people, and the increased commercial importance are all circumstances that might influence your resolution, and it is pleasant to think that they have had their weight.

The geographical position and the geological features of Birmingham must exert a direct influence upon its hygienic condi-

tion and its mortality. Accepting the parody of the Conservative leader, "Sanitas sanitatum, omnia sanitas," which simply acknowledges a present and very pressing necessity, I may, perhaps, usefully devote a short time to the mention of certain local peculiarities which affect the health of the inhabitants. In so doing, I shall allude to characteristics that may guide your personal observations, whilst I shall avoid even the appearance of trespass upon the technical subjects of your other addresses.

Situated at the north-western extremity of the county of Warwick, forming most probably a part of the old forest of Arden, the town is built on the eastern slope of three undulating hills, on the banks of two streams, the Rea and the Tame, and is one of the highest towns in the kingdom. All the approaches are by ascent, excepting that from the west, where the highest point of the borough is reached. This spot, at the top of the Hagley Road, is 617 feet above the sea-level, whilst the lowest point, at Saltley, on the east, is 288 feet. Between these extreme points, the ground-level of St. Philip's Church, in the centre of the town, is 462 feet, and that of King Edward's School, in which we are assembled, is only 30 feet lower. The absence of any dominant hill surmounted by a lofty public building prevents these elevations from being realised at a glance, but the height and the undulations in surface may be inferred from the fact that most of the streets pursue a diagonal course so as to lessen the declivities.

The ground is naturally poor, in an agricultural sense, and consists of sand, gravel, and clay. The substratum is of new red sandstone, which passes from the river Tees southward to Birmingham, and thence northward to the Mersey.

The southerly and oldest part of the town, running from High Street to Deritend by a deep descent, is the lowest and the dampest portion. It is here crossed by the river Rea, and has much clay in the subsoil; this clay extends up the valley of the stream to Sparkbrook, and ceases only at Moseley, which has a higher level and a sandy subsoil. From the conformation of surface and the character of the ground, it is clear that Nature has supplied every requisite for surface drainage into the

streams, and for the rapid percolation of storm-water through the porous subsoil : hence floods are rare. In former times, as the late Dr. Darwall told us in the *Medical and Surgical Reporter* of 1828, after heavy storms or unusually wet seasons, Deritend, in the neighbourhood of the Rea, was liable to inundations ; but this evil is now rectified by the strengthening of the banks of the stream, by the interception of the current for manufacturing purposes, and by the erection of bridges.

In order to render the drainage of the town more perfect, a system of deep artificial sewers has been designed and nearly completed. By means of these channels, all sewage is conveyed to a spot at the extreme east of the borough, three miles from its centre. At this outlet the mains are large in dimensions, are placed five feet above the level of the top-water of the Tame, and have storm-apertures to aid in carrying floods into the river. These sewers, constructed according to the dictates of modern science, are on the gravitating principle, so as to require neither machinery nor steam-power. The levels are so arranged between eleven, the minimum, and forty-two feet, the maximum depth, as to ensure a current that will carry refuse from the most distant part of the borough to the outlet within the space of two hours. This rapid flow is said to prevent decomposition and the generation of foul gases in the sewers ; but pedestrians in close weather may complain that unsavoury odours occasionally escape through the ventilators into the roadway, and that some contrivance for ensuring the conveyance of these gases to a higher level, where they would be speedily diluted, oxidised, and diffused by the upper currents of air, would be very acceptable, and must be contributory to health. There is one portion of the borough, the Small Heath District, which is unconnected with this system of drains. It is on the south side, consists of 930 acres of ground, of which 750 are under cultivation, has a population under six thousand, and has a daily dry weather flow of sewage of 214,000 gallons, which passes into a tributary of the river Cole.

The area of the borough, 8,420 acres, when divided between 350,164 inhabitants, the estimate of the last census, gives upwards of 124 superficial square yards to each person ; an allow-

ance that probably accounts for our freedom from typhus, as fully as the absence of marshes and bogs explains our immunity from ague. The distribution of this area, however, is not so equal as might be wished for sanitary purposes : the space per head varies in the different wards from 695 square yards in Edgbaston to 31 yards in St. Martin's Ward. Seven other wards yield a smaller superficial area than 100 square yards for each inhabitant. The density of population in the central and older parts of the town may be comprehended, but that districts which have been built since the importance of sanitary rules has been known should have been allowed to exceed the limits of health in house-accommodation, is only to be attributed to the anomalous position of a corporate body which, whilst endowed with powers to levy rates and govern the town, has no authority to curb the crude and ignorant designs of the building speculator, who, in order to secure a large immediate return for a small outlay, is at liberty to construct a court of scanty surface, approached by a narrow alley, with rows of sheds called houses, built back to back so as to support each other: defying through-ventilation, yielding scanty space for the admission of pure air, and as little for the escape of that which has been exhausted by respiration.

From these courts, possessing not a single sanitary attribute, containing open middens of faulty construction, arise fœtid exhalations that pollute such air as enters the still enclosure ; the leakage from the ash-pits through the soil into the wells from which water is drawn, gives rise at times to an excessive mortality from scarlatina, typhoid, diphtheria, diarrhœa, and other preventable diseases of a like type. Let contagion enter a space thus circumscribed, and the result may be safely predicted.

For the tenants of these defective courts, the only airing grounds are the streets, which fortunately present many open spaces in various parts. Well might Dr. Greenhow declare that "more than half our annual mortality results from diseases which prevail with a very great range of difference, in proportion as the sanitary circumstances are bad or good," and that the mortality from preventable disease in certain districts "raises the death-rate of the whole country 33 per cent. above the death-rate of the healthiest part."

The powers wanted to suppress this evil need not be vexatious. They are required only for the protection of the poor, embrace the simple questions of ventilation, space, and sewage, and might be safely dictated by a health-officer, aided by the Borough surveyor.

Before quitting this part of my subject, I must briefly refer to the disposal of our sewage, of which a large portion has been hitherto discharged into the river Tame. It is easy to accept and adopt an alliterative cry like that of "Rainfall to the river, sewage to the soil," and the application of the principle, if possible, would promise an inestimable advantage. The Town Council of Birmingham has attempted to carry out a modification of this scheme, by seeking power to enable them to purchase land for the disposal of the fluid sewage by "intermittent downward filtration," and the conversion of the more solid matters into an element of fertility to the land, instead of danger to its occupants. This intention has been thwarted temporarily by the inconsiderate vote of a small majority of our legislative assembly, but the question cannot be thus summarily settled ; it must again and speedily enforce Parliamentary attention, and, unless the value of a few acres of land is to be recklessly staked against human life, the convenience of the few must yield to the urgent necessities of the many.

Whilst sympathising with the Corporation in their efforts and their defeat on this question, there is one marked and culpable defect in the official appointments of this borough which demands severe animadversion. The imperfections that have been mentioned could not have existed unremedied, had there been a well-qualified medical officer of health possessing technical knowledge of hygienic rules ; capable of guiding the deliberations of the Council on this subject, and of framing comprehensive plans for the prevention of disease and the promotion of health. Such an officer, rendered independent by an adequate salary, freed from the cares of medical practice, exclusively devoted to sanitary science, and armed with power to exact information and aid from all the executive officers of the borough, would secure to the inhabitants that skilled care which they have a right to expect, would represent faithfully the views of our pro-

fession, and would be competent to contribute to those discussions between the "associated officers of health," which have materially advanced our knowledge of scientific hygiene. The cost of such a man would be more than compensated by a diminished rate of illness and pauperism, a more steady capacity for labour and a smaller ratio of crime. All of these points materially affect the financial expenditure of the borough.

By the Public Health Bill this defect will be remedied, and the town will be placed beyond the reach of amateur legislation, which has too often resulted in unscientific experiments, with a population as the *corpus vile* for their trial.

A sound, highly educated man should be selected from the members of that profession which has supplied those philosophical "Privy Council Reports" of the sources of disease and death that have guided our imperial Government, have formed a magnificent contribution to sanitary science, and have tended to make popular the broad rules of hygienic knowledge. This course, the only proper one, will rescue our corporate body from the humiliation of seeking, as it has done, the gratuitous guidance and opinions of their medical fellow-citizens, whose special learning has been acquired by devoted labour and technical education, which are estimated in other and ordinary transactions by an equivalent money value.

The large surface over which Birmingham is spread, and which has led to its being declared by Mr. Rawlinson "the most openly built town in the kingdom," contributes materially to its healthiness. Our streets are of fair width, excepting in the old town, in the main thoroughfares of which efforts to approximate them to our present requirements will be obvious to all. The buildings are low, rarely consisting of more than three or four storeys, and therefore offering little obstruction to the currents of air, with which an elevated table-land is sure to be visited. In some thronged business parts, such as High Street and Bull Street, the increasing value of land and the necessities of trade have led to more aspiring erections, but they have not yet reached the height of the Manchester warehouses, or obscured the sky like the buildings in the old part of Edinburgh. The streets are macadamised and cleanly, being kept in good

condition after they have been accepted by the Corporation. Recently formed streets in the suburbs are often defective in drainage and fouled by refuse. The danger from this source may be conceived when I mention that a thousand houses are annually added to the existing number.

The climate is dry, having a smaller rainfall, and one-third more of dry days than are experienced in Lancashire.

Four parks, forming admirable breathing spaces and yielding abundant opportunities for rational amusement and exercise, are opened to our people. On the eastern side of the borough, Aston Park, consisting of forty-three acres, has been rescued from the grasp of Building Societies by the combined subscriptions of the people and of the Corporation. The Saltley Park, presented by Sir C. B. Adderley, comprises ten acres. On the west Calthorpe Park, of thirty acres, has been the only recreation ground until lately ; but within a few months an estate of fifty acres, called Cannon Hill, rurally situated, well timbered and watered, with a varied surface, has been presented to the town by Miss Ryland. It is due to this large-hearted lady to say that, by this and other deeds of kindness and humanity, she has shown a noble estimate of the duties of wealth ; and a determination to mitigate the trials, ameliorate the condition, and promote the happiness and comfort of the labouring population of this town. Although placed on the outskirts of the borough, none of these parks are so distant from its centre as to overtax the physical powers of an indifferent pedestrian.

Few of our manufacturing processes are directly detrimental to health. The entire class of grinders, metal and wood polishers, and moulders, are exposed to pulmonary irritation from the inhalation of dust, whilst "wet-grinding," as it is called, superadds damp clothes and wet feet. A few suffer from heat only, as the lacquerers and glass-blowers. The majority of our workpeople, however, are more influenced by constrained positions whilst at work, by defective ventilation in crowded manufactories and by atmospheric vicissitudes, than by any special risk or danger. For some of these evils remedies have been provided by the employers of labour ; but self-will and intractability on the part of the mechanics at times render these precautions useless.

The trades of the town are numerous, and the subdivisions of labour are unusually great ; hence the fluctuations of commerce rarely fall heavily upon the entire class of artisans, and famine is of very rare occurrence.

There is no cellar population. As a broad rule, every family has its own dwelling-house, so that excessive overcrowding, with its consequences, is avoided.

These circumstances probably explain the favourable records of mortality, which have scarcely varied during the last thirty years, and have been a fraction below 25 per 1,000.

A supply of pure water has been called "a natural right," and Professor Gairdner says that "wherever water has become matter of private sale or barter, there has been a dereliction of duty on the part of the community as represented by the local authorities." It appears to me that the means of cleansing and purifying and lighting should be secured to every dwelling-house. To the poor these adjuncts to health and comfort are necessities to moral and physical well-being. An irreparable mistake was committed here when the local authorities, evading or failing to perceive their proper responsibilities, permitted duties that should have been municipal to escape them, and allowed the control and the profits of the water and gas supplies to pass into the hands of private companies. The acquisition of such properties now would cast a heavy additional burden upon the ratepayers ; whilst, as a preliminary to the formation of new competitive and municipal schemes, it would be requisite to prove inadequacy or impurity in the supplies of the existing companies before imperial legislative sanction could be sought or obtained.

In 1828, the late Dr. Darwall declared the water-supply of the town to be defective. Drawn from springs and wells, the best water was hard, and contained two or three grains of muriate of lime in the pint. Wells in the vicinity of manufactories were impregnated with copper and tin, so as to be nauseous and sometimes emetic ; and the majority of waters near the centre of the town contained nitrates from sewage pollution. For domestic purposes the inhabitants at that time were chiefly supplied from pumps in Digbeth, which were found by the late

Thomas Southall to contain seven grains and a-half of the nitrates of lime and potash to the pint. Hence you will probably agree with me, that the time was ripe for any scheme that promised potable water to a thirsting population.

The first service of our Waterworks Company was laid on in 1831, the supply being drawn from the river Tame. Much prejudice existed at first against the water, and this may have been preservative; for in 1832, when cholera ravaged Wolverhampton, Willenhall, Walsall, Bilston, and other places through which the Tame flows, and from which it receives drainage, the Water Company supplied only a small district of the town, and that chiefly for manufacturing purposes. It is, however, a curious fact that, although the sewage of many populous places pollutes the stream through its tributaries, such is the purifying power of running water in oxidating and rendering innocuous their refuse, that at Hamstead, some five miles below the last sewage entry into the Tame, fine and healthy trout are frequently taken by the angler.

As the advantage of a free and constant water supply became felt, the Company obtained additional powers, and wisely excluded rivers that, from running near towns, may be contaminated by sewage-matters. Discarding the Tame, their supplies are now drawn from streams passing through purely agricultural districts (notably from the Sutton Basin) and from Artesian wells bored into the new red sand-stone, which promise an abundant supply of pure well-filtered water. It has been roughly estimated that nearly two-thirds of the town are thus supplied, and that the daily consumption amounts to upwards of eight millions of gallons, or between thirty and thirty-five gallons per head.

Whatever criticism may be passed upon its purity, the water may be drank without fear. It is vastly superior to that of the old wells, the aëration of which was so pleasant to the palate as to conceal its impurities. Our borough analyst, Dr. Hill, has declared it to be superior to the standards accepted by the Brussels Congress and by Dr. Parkes.

Few things better illustrate the existence of an ebb-tide in the progress of civilisation than the supply of water to large

cities. Our popular perception of the necessity of pure water is comparatively recent, but in their day of power the Romans were alive to its importance as affecting health and comfort. The extent and magnificence of their aqueducts for supplying the household wants, the fountains and baths of Rome with water, do not rest on mere historical record. Two of these engineering triumphs are yet in existence and in use, the Aqua Virgo and the Aqua Paolo or Alsietium. Grand in conception, admirable in execution, they pursued their course subterraneously or on arches, according to the levels, and were worthy of the Emperors under whose rule they were constructed.

The streams which run near to the town need not be described, as they are unimportant ; they all run into the Trent, which joins the Ouse and the Humber, so that our river-water reaches the sea on the coast of Yorkshire.

The atmosphere of Birmingham will compare, and not unfavourably, with that of other manufacturing cities. We know that it is vitiated in parts by those emanations which must occur in every dense population, and more especially if sanitary supervision be perfunctory and inadequate.

One of our greatest evils is the smoke issuing from the tall chimney-stacks of our manufactories, and perceptible for some miles beyond the town. It is curious that, whilst solemn predictions are issued as to the exhaustion of our coal-fields, and the approaching substitution of some other fuel, whilst the press dispenses Jeremiads on the increasing cost of coal, this wasted carbon is permitted to obscure the sky, to fill the air with fuliginous impurities and to return to us as smuts for the encouragement of the laundress. No scientific mechanician impressed with the motto "*ex fumo dare lucem*," has yet invented a perfect machine, acceptable to employers of labour and of moderate cost, by which this waste fuel may be utilised without the aid and imperfections of a human stoker.

Whilst of late years the town has grown rapidly, and has offered new sources of attraction to the labourer and the merchant-prince of commerce, it has always worn features of interest to the man of science, the politician, and the philanthropist. In archaeology we have few attractive remains. The

ancient landmarks and monuments described by the learned Hamper and others have disappeared under the requirements of a rapidly increasing population and a necessarily extended building area. The fine old Elizabethan Hall at Aston is well worth a visit, on account of its architectural features and its historical traditions. The residence of Sir Thomas Holte, it afforded shelter to Charles I in October, 1642, whilst on the march from Shrewsbury to relieve Banbury Castle, and before the battle of Edge Hill. Subsequently it was cannonaded by the Parliamentarians, and reduced after a two days' siege. Such slight injuries, however, were inflicted on the building as to raise a smile in these days at the artillery then in use. In the church of St. Martin may still be seen monuments that carry us back to the period of the Normans, whilst our portion of the great Ikenield Road that stretched from Southampton to Tynemouth, recalls to memory the time of the Cæsars and the occupation of the country by the victorious legions of Rome.

We cannot compete with those natural attractions that at Plymouth seduced stern devotees of science from their allegiance, but we can show how advancing knowledge influences man's invention, skill, and industry, and subjects natural and chemical forces to his control; how labour is dignified and intellectual supremacy is asserted by the employment of those potential agents, steam, heat, electricity, and chemical action, which are here made to carry out the most gigantic and most delicate operations.

So near are we to the furnaces and smelting works of South Staffordshire, that their vicinity is revealed at night by a glow in the sky from numerous fires. This has been called the "Aurora Borealis of the Black Country," and has been poetically described by Elihu Burritt as "the halo around the brow of swart and patient labour that knows no rest." Having retired with this luminous reflection to repose, instead of awakening to the rippling music of a Devonian tide, you may be rudely disturbed by the steam gong that summons the mechanic to his early labour, or by the mighty throb of the steam hammer stamping automatically the resisting metal, and impressing it with forms of beauty or utility.

It has been well said that this town "is the most remarkable centre of manufacturers of metal in the world." "Whatever metal *can* do, Birmingham will make it do : from a pin's head to a steam engine, from a pewter pot to a copper boiler, from a gilt button to a brass bedstead." Certainly the metals, precious and base, are here, by mechanical agencies or manipulative skill, made to assume every shape, from the delicate ornament vying in capillary tracery with gossamer, from the frail threads of wire that bind our island to distant continents and establish intercommunications incredibly rapid, to those monstrous masses of metal which span the chasm or rushing stream and form the iron roads of intercourse and traffic between the busy communities of which this country consists, and by whom its unparalleled commercial prosperity has been achieved.

Whilst these triumphs of this midland city proclaim themselves in sonorous utterances, abundant illustrations of more silent forces in use amongst us may be furnished. Here you may witness the chemico-galvanic process of metallic deposit, conceived and perfected by one of our professional brethren, the late Mr. Wright, and worked by Messrs. Elkington and Mason, who have administered largely to the wants of civilised life. The effects of this invention have been to beautify the commonest material, to decorate our houses and persons, and indirectly to refine our habits and elevate our taste. A reference to this subject suggests the intimate connection that subsists between the various branches of human knowledge and industry. Had not our power of dealing with metal, in moulding, casting, and chasing, progressed, this filmy electro-deposit—which bears the same relation to the material enclosed by it, as does the amber to the fly that it embalms—would scarcely have been devoted to such general uses. So again, had not the study of natural forms been advocated by the appeals of cultivated men, who appreciated the glorious relics of a civilization that has long passed away, our manufacturers would scarcely have produced those graceful and classical designs, which characterise much of the ornament of the present age, and which may, by further cultivation, enable us hereafter to challenge the productions of the palmiest days of Greece.

One noiseless craft to which I would call your attention is the papier maché trade, which is almost peculiar to Birmingham. Derived first from India and China, it was introduced here more than a century ago by Mr. Taylor, a large and ingenious employer of labour, for the production of snuff-boxes and trays. So wide is its applicability, that it is now used, not only for knick-knacks, but for the construction of such massive domestic articles as sofas, bedsteads, sideboards, and chairs. The prepared surface of this paper-pulp receives a high polish, and is capable of such complex decoration by mother of pearl, artificial gems, gold and painting, as to conceal its texture, and render the material unrecognisable.

It has been too much the custom to consider Birmingham as a hive of busy artisans not over-refined: a nest of metal-workers so expert in imitative art, and so little troubled by qualms of conscience, as to be constantly engaged in the production of "lacquered shams and bad halfpence." It is lamentable to see such accusations made in London newspapers whenever our population disagrees in view with a literary Jupiter, or offends the delicate susceptibilities of some writer of political and other "leaders." To such men it is useless to suggest that a community cannot fairly be saddled with the sin of an individual. It is long since Charles Knight, in *The Land we Live In*, showed that the wondrous skill with which metals are handled has led to the ingenuity of our artisans being occasionally enlisted by unscrupulous non-residents, who have carefully concealed their designs, and have saddled our too-confiding class of operatives with their sins. How many works of art, useful and ornamental, that have been accepted as national standards of taste, have sprung from the talent and labour of our workmen, and have been credited to other cities, it is not my duty to inquire. The thought, however, is suggestive in its truth.

The commercial position and material prosperity of this town have been due to such men as the late Matthew Robinson Boulton, John Taylor and others, who possessed the highest views of moral rectitude and honour, and, with a keen sense of the wants of mankind, established new methods of administering to them. It may be said of Mr. Boulton—a Birming-

ham man, and a veritable Mecænas of manufacturers—that he was highly educated, that he cultivated science, associated with men of learning, and introduced into trade new applications of mechanical power. Prudent and perceptive, he won his laurels in the stony paths of trial and difficulty. The Soho Works, built by him more than a hundred years ago, then formed the largest manufactory in England. Hence these works—which employed a thousand people—became an object of interest to the whole kingdom. Here, after Boulton had been joined by James Watt, the first perfect steam-engine was made which supplanted water-power, revolutionised commerce and travel, and supplied the world with a new motive force. Here, also our coinage was beautified and improved; and here Mr. Murdock, the engineer of the firm, first introduced the illuminating power of gas to this country, which has contributed so much to man's comfort and convenience. The works were built on a barren heath some two miles from the town; by planting and draining, the surrounding land became a park with fine timber and water, worthy of its princely inhabitant. The works stood for many years after their glory had departed. They were visited by strangers from distant lands, and had an interest to our transatlantic cousins that rivalled the shrine of Shakespeare. This "Mecca to mechanism," as it has been aptly called, is now no more. The building has been pulled down, and its site—like all available land in increasing communities—is advertised as suitable for "villa residences!"

Boulton's time was the Augustan era of scientific inquiry in Birmingham. Taking only the eminent men who constituted the Lunar Society (so-called from their meeting when the moon was at its full and would facilitate their travels), it may be said that few towns could boast such an array of remarkable talent and capacity. The names of Boulton, Watt, Withering, Priestley, Galton, Keir, and Berrington, are sufficient to prove the assertion; and Mrs. Schimmelpenninck describes each member as being "the centre of intellectual friends" who frequented the meetings, and added to the depth and brilliancy of their discussions. The mention of Sir W. Herschel, Sir Joseph Banks, Dr. Solander, and Dr. Afzelius, as frequent visitors, is a sufficient stamp of their intellectual calibre.

In this town, also, Dr. Roebuck introduced the use of the lead-chamber in the production of sulphuric acid as a substitute for the two old methods of burning sulphur under bell-glasses, or distilling sulphate of iron at red heat. By this improvement he rendered the process continuous, increased the power of production, and reduced cost. The value of his discovery may be estimated, when it is remembered that sulphuric acid is essential to all the metal trades, and that without it the present gigantic works for the production of alkali and artificial manure could not exist.

Whilst ready to welcome and adopt strangers, Birmingham has not always appreciated the genius of her children, but has presented herself at times as a stern step-mother. The populace, whilst thoroughly loyal, orderly, law-abiding, and usually tolerant in spirit, has been betrayed at times by misconception or misguidance into transitory tumult and violence.

The two subjects, Politics and Theology—inseparable in this country—have rarely borne a free discussion without leading to more human passion and unrighteousness than all other sources of difference to which we are exposed. Against this we appear to have no protection. The *odium theologicum*, once fulminated, recognises no genius opposed to its own narrow doctrines, and is antagonistic to that spirit of inquiry by which human progress has been promoted and a higher standpoint reached. To this may be ascribed the terrorism which prevailed in 1791, when Priestley, the philosopher, chemist, and scientific investigator, was, with Ryland, Russell, Hutton, Taylor, and other citizens, who did not conform to the views of the mass, persecuted relentlessly by the destruction of their houses and property, and they themselves narrowly escaped the *auto-da-fé* of a popular though unreasoning Inquisition. It is lamentable to think that a reflective and accomplished inquirer—whether right or wrong—was driven by bigotry and intolerance to seek a home for his later years of life beyond the far Atlantic, and that, through the burning of his manuscripts, the world was deprived of scientific discoveries that could not be reproduced. Amongst the edifices plundered and dismantled in this period of lawlessness and anarchy, was the house built by Basker-

ville, the greatest printer that England has produced. He was the founder of the most perfect type known : his edition of the Bible is sighed after by bibliographers; his exquisite publications of the ancient and modern classics, and of William Hunter's work on the Uterus, are considered to be treasures of typographic art. During his life, so little were his labours in the service of literature appreciated, that large pecuniary loss resulted, and no purchaser of his printing apparatus could be found in his native country. It was at length secured by a French literary society, and the English nation has now to regret that a type so fine as that of Baskerville, employed by him in the diffusion of the highest knowledge—the divinest revelation vouchsafed to man—should have found its last resting-place in a faubourg of Paris, its first duties in spreading the sophistries of Voltaire.

The medical annals of this town furnish a full list of distinguished men. The philanthropic Dr. Ash, who founded the General Hospital, earned the highest local fame. Failing health caused his removal to London, where he was made a Fellow and Censor of the Royal College of Physicians. Dr. Withering, his immediate successor, was widely known by his botanical publications. He lies in the parish churchyard of Edgbaston, close to the Hall in which he passed many years of life. Dr. Male, highly esteemed as a sound physician and most honourable man, rested his literary fame upon his *Juridical Medicine*. To say that Dr. Edward Johnstone was a highly cultivated physician ; that his brother John—your President in 1834—was an accomplished scholar, an intimate friend of Dr. Parr, with whom he sympathised in classical lore ; and that Dr. James—the President of your last meeting here—won esteem by his acquirements, his courtesy, and his kindness, would be a work of supererogation to the older members of this Society.

Whilst paying merited honour to our physicians, it is due to the surgeons of the town to state that the literature and practice of our art have been ably represented by those who have preceded us. George Freer, a surgeon to the General Hospital, was the first who successfully applied a ligature to the ex-

ternal iliac artery for the cure of femoral aneurism, as suggested by Abernethy.

From the study of this and other cognate cases, his pupil, the late Mr. Joseph Hodgson, probably derived the bias that led to that admirable memoir, *On the Diseases of Arteries and Veins*, which gained the Jacksonian prize of the Royal College of Surgeons, became a surgical authority, and secured for him the character for sagacity and judgment that he subsequently enjoyed. More recent Jacksonian prizemen may be named. My colleague Mr. Crompton earned this distinction by an essay on Diseases of the Tongue; the late Frederick Ryland by a valuable monograph on the Throat and Larynx; and Mr. John Clay by a treatise on Ovarian Disease. It is to be regretted that the essays of Mr. Crompton and Mr. Clay have remained unpublished.

To extend the list would—if I have not already earned the rebuke—be tedious. I will content myself, therefore, with saying that our profession yet numbers members who will not suffer the reputation of Birmingham surgeons to decline from its achieved position.

Having referred thus briefly to the older officers, who were necessarily connected with the General Hospital, as the only large medical charity then in existence, I must now be permitted to say that examples nobly set have been zealously followed, and that a variety of institutions, secondary perhaps in scope, but paramount in popular interest and sympathy, have been established amongst us. The Queen's Hospital, founded by Wm. Sands Cox, in connection with the Queen's College (which it was his dearest object to convert into a great Midland University), graced by the favour of Royalty, and approaching in magnitude to its elder sister, competes with it for support. The General Dispensary; the Midland Eye Hospital, founded by Dr. De Lys and Mr. Hodgson; the Hospital for Sick Children, so eloquently advocated by Dr. Heslop; and a Special Hospital (recently established) for Women—appeal, and not in vain, to the sympathy of contributors. A Sanatorium is in course of erection, designed to furnish ample space, the most perfect hygienic arrangements, and life-giving air from the breezes that

play over the hills of Bromsgrove Lickey. This will form an adjunct to all the medical charities, and will be suited to invigorate frames that have been exhausted by disease, and are unfitted to encounter the evil influences of a close residence in a polluted atmosphere.

Under the auspices of my friends Dr. Fletcher and Mr. Kimbell, an institution has been founded at Knowle for the treatment of imbecile children upon the principle of the Earlswood Asylum. From the adaptation of a cottage to the wants of a few inmates, they have so completely established the benefits that may be conferred upon these piteous claimants for human care and benevolence, that the sympathy and co-operation of the wealthy has been secured, and a noble building has been commenced, which promises to administer adequately to our local necessities.

With regard to the establishment in which we are assembled, it is, architecturally and educationally, one of the brightest ornaments of the town. Originating in the wise consent of a youthful king to a petition from the inhabitants of Birmingham, a small annual grant, devoted by pious men to the Convent of the Holy Cross, after the dissolution of these monastic institutions by Henry VIII, was granted for educational purposes, and formed an endowment for this school. The value of the lands thus bestowed has increased a thousandfold, and the income has in course of time become regal. Regarded as a school for imparting classical and general knowledge, it has amply fulfilled the intentions of the founder by securing to the young a liberal, scholarly, and often an University education. Its past history is full of bright associations ; and whatever modifications in its course of instruction may be needed to meet the wants of the present age, it has deserved well of past generations.

You will share with me in an expression of deep regret that personal illness has prevented our associate Dr. Fleming from delivering the Address in Medicine, and from taking that prominent part in this meeting which he was invited to assume by your Council, and for which his literary and practical acquirements and his known accuracy so peculiarly fitted him.

We must all lament that the voice which advocated this town as your place of annual meeting will be heard no more. The energy and fervour of Mr. Clayton's manner, his singular conversance with the affairs of the Association, and his judicious advice in its management, will be missed by the active members ; whilst we, his intimate fellow-workers, regret the loss of one possessed of great perceptive and executive ability, and endeared to us by many estimable personal characteristics.

Other hands, however, will be extended in friendship and brotherhood ; other voices will proclaim our hearty appreciation of your visit.

As the representative of the Birmingham and Midland Counties Branch of the Association, and in the name of the whole profession of the district, I say to all our visitors—Welcome ! welcome ! thrice welcome !

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